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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NGUYEN, LAM S

ART UNIT PAPER NUMBER

2853

DATE MAILED: 09/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/067,359

Applicant(s)

NITTA ET AL.

Examiner

LAM S NGUYEN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-15 and 18-27 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 16 and 17 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-3, 6-15, 18-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Koike et al. (US 5767876).

Koike et al. disclose a color ink-jet recording apparatus using a black recording head (FIG. 36, element 81) that ejects black ink on the basis of black image data and color recording heads that ejects color ink on the basis of color image data (FIG. 36, element 82), the color ink permeating through a recording medium at a higher speed than said black ink (column 4, line 57-65), the apparatus completing a record image in a predetermined recording area on said recording media by causing said recording heads to perform a plurality of scanning operations in said predetermined recording area (FIG. 38-51), the apparatus comprising:

data dividing means, which uses division patterns for each of said recording scans to allot black image data corresponding to said predetermined recording area to each of said recording scans, and to allot color image data corresponding to said predetermined recording area to each of said recording scans (FIG. 38-51: a corresponding dividing means for dividing black or color image data for each scan), wherein said data dividing means sets different allotment rates for the division patterns for said black image data and color image data used during the same recording scan (FIG. 38-51: the allotment rates of black and colors are different;

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For example, in FIG. 49, recording scan A, while the allotment rate of Cyan is 50%, the allotment rate of Black is 33%).

Referring to claims 2, 14: wherein division pattern having different allotment rates are used as the division patterns for said black image data and color image data (FIG. 38-51).

Referring to claims 3, 15: further comprising black image data allotment rate setting means for setting, for each of said recording scans, allotment rates for the division patterns for said black image data (FIG. 38-51: a corresponding means for setting the rate of black image data for each scan); and

color image data allotment rate setting means for setting, for each of said recording scans, allotment rates for the: division patterns for said color image data (FIG. 38-51: a corresponding means for setting the rate of color image data for each scan);

wherein both said image data allotment rate setting means set different allotment rates for the division patterns for said black image data and color image data used during the same recording scan (FIG. 38-51: the allotment rates of black and colors are different; For example, in FIG. 49, recording scan A, while the allotment rate of Cyan is 50%, the allotment rate of Black is 33%).

Referring to claims 6, 18: wherein when a black image is to be formed in said predetermined area, before or after the black ink is caused to impact the recording medium, at least one of said plural types of color ink is caused to impact locations onto which the black ink is ejected (FIG. 40-42, 44-45, 48-51, FIG. 34A_B)).

Referring to claims 7, 19: further comprising a thinning means, which thins said black image data at a predetermined thinning rate and causes the plural types of color ink to impact

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portions of the recording area in which said black image data has been thinned (FIG. 44-45: scan A and FIG. 14A-B).

Referring to claims 8, 20: wherein at least one of said plural types of color ink is reactive and tends to cause said black ink to solidify or cohere when contacting with said black ink (column 21, line 32-41).

Referring to claims 9, 21: wherein said recording heads executes recording only during scans in one of the forward and backward scanning directions, and in the scanning direction in which the recording is carried out, said color recording heads are arranged in front of said black recording head (FIG. 46).

Referring to claims 10, 22: wherein if said recording heads carry out recording in both the forward and backward scanning directions, then during the first recording scan, said color image data has a higher allotment rate than said black image data (FIG. 49).

Referring to claims 11, 23: wherein said plural color ink types include cyan, magenta, and yellow ink (FIG. 36, element 82).

Referring to claims 12, 24: wherein said recording heads exert thermal energy to generate bubbles in the ink so that energy generated by the bubbles causes the ink to be ejected (column 1, line 29-32).

Referring to claims 26-27: a program for executing image processing and a computer-readable storage medium storing the program (column 18, line 18-31).

Allowable Subject Matter

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Claims 4-5 and 16-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Referring to claims 4 and 16: The most pertinent art Koike et al. (US 5767876) fails to disclose wherein if said black image data allotment rate setting means sets an allotment rate higher than a predetermined reference allotment rate, the color image data allotment rate setting means sets an allotment rate lower than said reference allotment rate, and if said black image data allotment rate setting means sets an allotment rate lower than said reference allotment rate, the color image data allotment rate setting means sets an allotment rate higher than said reference allotment rate. Therefore, the claimed invention is not disclosed by the prior art.

Claims 5 and 17 are allowable because they depend directly on claim 4 and 16.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAM S NGUYEN whose telephone number is (703)305-3342. The examiner can normally be reached on 7:00AM - 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, STEPHEN D. MEIER can be reached on (703)308-4896. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-3431 for regular communications and (703)305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

LN
August 20, 2003


Stephen D. Meier
Primary Examiner